

Claims

Claimed is:

1. An open cell alumina filter comprising at least about 80%, by weight, γ -phase alumina.
2. The open cell alumina filter of claim 1 wherein alumina is at least about 80% by weight, γ -phase alumina.
3. The open cell alumina filter of claim 2 wherein said alumina comprises at least about 90%, by weight, γ -phase alumina.
4. The open cell alumina filter of claim 3 wherein said alumina consist essentially of γ -phase alumina.
5. The open cell alumina filter of claim 1 wherein said alumina filter comprises less than about 1%, by weight leachable species.
6. The open cell alumina filter of claim 5 wherein said alumina filter comprises less than about 0.1%, by weight leachable species.
7. The open cell alumina filter of claim 5 wherein said alumina filter comprises less than about 1%, by weight sodium.
8. The open cell alumina filter of claim 7 wherein said alumina filter comprises less than about 0.1%, by weight sodium.
9. A process for forming an open cell alumina filter comprising the steps of:
forming a ceramic slurry comprising:

hydrated alumina selected from bauxite and aluminum hydroxide; and

ammonia stabilized colloidal silica;

forming voids of organic material in said ceramic precursor slurry to form a wet body;

heating said wet body to a temperature above a volatilisation temperature of said organic material but less than 1250°C to form a green ceramic; and

heating said green ceramic to a temperature of less than 1250°C to form said open cell alumina filter.

10. The process for forming an open cell alumina filter of claim 9 wherein said hydrated alumina is bauxite.
11. The process for forming an open cell alumina filter of claim 9 wherein said organic material is an open cell foam and said slurry impregnates voids of said open cell foam.
12. The process for forming an open cell alumina filter of claim 9 wherein said organic material comprises organic spheres.
13. The process for forming an open cell alumina filter of claim 9 wherein alumina of said filter comprises at least about 80%, by weight, γ -phase alumina.
14. The process for forming an open cell alumina filter of claim 13 wherein said alumina comprises at least about 90%, by weight, γ -phase alumina.
15. The process for forming an open cell alumina filter of claim 14 wherein said alumina consist essentially of γ -phase alumina.
16. The process for forming an open cell alumina filter of claim 9 wherein said ceramic filter comprises no more than about 1%, by weight, leachable species.
17. The process for forming an open cell alumina filter of claim 16 wherein said ceramic

- filter comprises no more than about 0.1%, by weight, leachable species.
18. The process for forming an open cell alumina filter of claim 16 wherein said ceramic filter comprises no more than about 1%, by weight, sodium.
 19. The process for forming an open cell alumina filter of claim 18 wherein said ceramic filter comprises no more than about 0.1%, by weight, sodium.
 20. The process for forming an open cell alumina filter of claim 9 wherein said slurry comprises about 50-70%, by weight hydrated alumina and about 5-25%, by weight ammonium stabilized silica.
 21. The process for forming an open cell alumina filter of claim 20 wherein said slurry comprises about 55-60%, by weight hydrated alumina and about 15-20%, by weight ammonium stabilized silica.
 22. A method for filtering a medium comprising passing said medium through an alumina filter wherein said filter comprises alumina and said alumina comprises at least about 80%, by weight, γ -phase alumina.
 23. The method for filtering a medium of claim 22 wherein said alumina comprises at least about 90%, by weight, γ -phase alumina.
 24. The method for filtering a medium of claim 23 wherein said alumina consist essentially of γ -phase alumina.
 25. The method for filtering a medium of claim 22 wherein said alumina filter comprises no more than about 1%, by weight, leachable species.
 26. The method for filtering a medium of claim 25 wherein said alumina filter comprises no

- more than about 0.1%, by weight, leachable species.
27. The method for filtering a medium of claim 25 wherein said alumina filter comprises no more than about 1%, by weight, sodium.
 28. The method for filtering a medium of claim 27 wherein said alumina filter comprises no more than about 0.1%, by weight, leachable species.
 29. The method for filtering a medium of claim 22 wherein said medium is an aqueous medium.